DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. AD21-12-000]

Electrification and the Grid of the Future; Supplemental Notice of Technical Conference

As first announced in the Notice of Technical Conference issued in this proceeding on March 2, 2021, the Federal Energy Regulatory Commission (Commission) will convene a Commissioner-led technical conference in the above-referenced proceeding on Thursday, April 29, 2021, from 10:00 a.m. to 6:00 p.m. Eastern Time. The conference will be held electronically. Attached to this Supplemental Notice is an agenda for the technical conference, which includes the final conference program.

Discussions at the conference may involve issues raised in proceedings that are currently pending before the Commission. These proceedings include, but are not limited to:

Michigan Electric Transmission Company, LLC, Docket No. ER21-424;

Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators, Docket No. RM18-9.

The conference will be open for the public to attend electronically. There is no fee for attendance. Registration for the conference is not required. Information on this technical conference, including a link to the webcast, will be posted on the conference's event page on the Commission's website, https://www.ferc.gov/news-events/events/technical-conference-discuss-electrification-and-grid-future-04292021, prior to the event.

The conference will be transcribed. Transcripts of the conference will be available for a fee from Ace-Federal Reporters, Inc. (202) 347-3700.

Commission conferences are accessible under section 508 of the Rehabilitation Act of 1973. For accessibility accommodations, please send an e-mail to accessibility@ferc.gov, call toll free (866) 208-3372 (voice) or (202) 208-8659 (TTY) or send a fax to (202) 208-2106 with the required accommodations.

For more information about this technical conference, please contact:

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Dated: April 29, 2021

Kimberly D. Bose,
Secretary.

Technical Conference on Electrification and the Grid of the Future

Docket No. AD21-12-000
April 29, 2021

Agenda and Speakers

10:00 am – 10:15 am: Welcome and Opening Remarks

10:15 am – 11:45 am: Panel 1: Projections, Drivers, and Risks of Electrification

This panel will explore the future and current state of electrification in the United States. Panelists will discuss how electrification could unfold, including the major drivers of electrification, the sectors and key technologies implicated, and the likelihood and magnitude of change to electricity demand under various electrification scenarios. Panelists will also discuss the environmental justice considerations and cybersecurity risks associated with electrification. The panel may include a discussion of the following questions:

1. What are the main drivers of electrification? Is the shift from using non-electric sources of energy to using electricity more pronounced in certain sectors or industries? How might public policy, energy costs, and technology drive electrification in the future?

2. What technologies are commercially available and currently being deployed to electrify different sectors or industries? What sectors and industries are driving the implementation of these technologies and how are they implementing them? How quickly are these technologies being deployed, and are there regional differences in the scope and rate of deployment?

3. How is electrification expected to affect electricity demand growth in the short term and the long term? How might electrification change electricity demand in the future in terms of daily and seasonal demand patterns, absolute magnitude of electricity demand on average, and during peak periods?

4. How might electrification affect marginalized communities? What are the environmental justice considerations associated with electrification?

5. What are the cybersecurity, reliability, and operational risks and/or benefits associated with specific technologies and industrial processes solely dependent on electricity and the corresponding change in electricity demand?

Panelists:

- ***Rob Chapman****, Senior Vice President for Energy Delivery and Customer Solutions, Electric Power Research Institute*
- ***Katherine Hamilton****, Chair, 38 North Solutions; Executive Director, Advanced Energy Management Alliance; and Co-Chair, World Economic Forum Global*

Future Council on Clean Electrification

- ***Jeff Dennis**, General Counsel and Managing Director, Advanced Energy Economy*
- ***Matthew Tisdale**, Executive Director, Gridworks*
- ***Adrienne Mouton-Henderson**, Deputy Director, Renewable Energy Buyers Alliance (REBA)*
- ***Carlos Casablanca**, Managing Director, Distribution Planning and Analysis, American Electric Power*
- ***Ella Zhou**, Senior Modeling Engineer, National Renewable Energy Laboratory (NREL)*
- ***Glenn Blackmon**, Manager, Energy Policy Office, Washington State Department of Commerce*

11:45 am – 12:00 pm: Break

12:00 pm – 1:30 pm: Panel 2: Infrastructure Requirements of Electrification

This panel will focus on how transmission owners and system operators in both regional transmission organization (RTO) and independent system operator (ISO) regions and non-RTO/ISO regions are planning to cost-effectively and reliably integrate changes in electricity demand due to electrification and whether there are any existing challenges in transmission, interconnection, and resource adequacy planning processes that need to be addressed. Beyond planning, the panel will explore the types of infrastructure investments electrification may require, including additional generation; local, regional, and interregional transmission; and distribution investments. The panel may include a discussion of the following questions:

1. What type of infrastructure investments are required to address the respective challenges of electrification (i.e., additional generation, local, regional or interregional transmission, and distribution investments)?

2. What approaches are transmission owners and system operators taking to cost-effectively meet the infrastructure requirements of projected electrification in the current transmission, interconnection, and resource adequacy planning processes? How do these approaches consider reliability, and what impacts do those considerations have on the need for infrastructure investment for electrification?

3. What measures are being taken to identify and align the costs of investments needed for electrification with the beneficiaries?

4. What, if any, existing regulatory and/or tariff requirements act as barriers to, or otherwise do not consider, electrification and its associated growth in demand? For example, does the scenario modeling in current regional transmission planning processes reflect increased demand due to electrification driven by market trends and public policies?

Panelists:

- ***Pedro Pizarro**, Vice Chairman, Edison Electric Institute; President and CEO,*

Edison International

- ***Jordan Bakke**, Senior Manager of Policy Studies, Midcontinent Independent System Operator, Inc.*
- ***Rachel Huang**, Director of Energy Strategy, Research & Development, Sacramento Municipal Utility District*
- ***Dr. Asa Hopkins**, Vice President, Synapse Energy Economics*
- ***Ric O'Connell**, Executive Director, Gridlab*
- ***Larry Gasteiger**, Executive Director, WIRES*
- ***Gary Rackliffe**, Vice President of Market Development and Innovation, Hitachi ABB Power Grids*
- ***Roger Kranenburg**, Vice President of Energy Strategy & Policy, Eversource Energy*

1:30 pm – 2:30 pm: **Lunch**

2:30 pm – 4:00 pm: **Panel 3: Transmission and Distribution System Services Provided by Flexible Demand**

This panel will explore transmission and distribution grid services that can be provided by newly electrified resources (e.g., electric vehicles, smart thermostats, heat pumps, etc.) and the technology required for these resources to provide grid services. It will also discuss whether any barriers exist to these resources providing grid services they are technically capable of providing. The panel may include a discussion of the following questions:

1. What grid services can newly electrified resources provide or otherwise facilitate?

    a. For example, what grid services can consumer electric vehicles or electric vehicle fleets most effectively provide today? What is the current state of development for vehicle-to-grid technologies, and will further advancements enable consumer electric vehicles or electric vehicle fleets to provide additional grid services in the future?

    b. What other types of newly electrified resources can currently provide grid services, and what grid services can they most effectively provide? For example, can grid-interactive buildings be meaningful sources of flexible demand?

    c. What, if any, newly electrified resources cannot currently provide grid services, but may be able to in the future? What barriers must be overcome for that to occur?

2. What technological capabilities (e.g., interoperability)[1] are required for newly

[1] Interoperability refers to "the capability of two or more networks, systems, devices, applications, or components to work together, and to exchange and readily use information — securely, effectively, and with little or no inconvenience to the user." *See* National Institute of Standards and Technology, Natl. Inst. Stand. Technol. Spec. Publ.

electrified resources to provide grid services? What is the current state of development for these capabilities? What could speed up or slow down such development?

3. What challenges exist to deploying newly electrified resources to provide grid services in the RTO/ISO and non-RTO/ISO regions?

4. What barriers, if any, exist to newly electrified resources providing grid services in wholesale or retail markets?

Panelists:

- ***Adrianne Collins**, Senior Vice President of Power Delivery, Southern Company*
- ***Pamela MacDougall**, Senior Manager of Grid Modernization, Environmental Defense Fund*
- ***Maria Bocanegra**, Commissioner, Illinois Commerce Commission; Chair, NARUC EV Working Group*
- ***Garrett Fitzgerald**, Principal of Electrification, Smart Electric Power Alliance*
- ***Peter Klauer**, Senior Advisor Smart Grid Technology, California Independent System Operator Corporation*
- ***Anne Smart**, Vice President of Public Policy*, *ChargePoint*
- ***Jeff Deason**, Program Manager in Electricity Markets and Policy Department, Lawrence Berkeley National Laboratory*
- ***David Nemtzow**, Director of the Building Technologies Office, U.S. Department of Energy*

4:00 pm – 4:15 pm: **Break**

4:15 pm – 5:45 pm: **Panel 4: Local, State, and Federal Coordination**

This panel will explore the roles of local, state, and federal governmental entities, with regard to electrification moving forward. This panel will focus on how local, state, and federal governmental entities can coordinate to ensure the grid is prepared to handle additional load from electrification and to ensure that newly electrified sources of energy demand provide the grid services they are technically capable of providing. The panel may include a discussion of the following questions:

1. What role can coordination among local, state, and federal governmental entities play with regard to electrification?

2. What planning and coordination among local, state, and federal governmental entities is necessary to facilitate the provision of grid services by newly electrified resources in a way that maximizes benefits to the grid while decreasing the

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potential reliability, operational, and cybersecurity risks that electrification could pose?

3. Regional initiatives and multi-state cooperation efforts have formed in recent years to coordinate EV charging infrastructure deployment. What can we learn from those efforts and what role, if any, does the federal government play in supporting those efforts?

4. How can interoperability protocols and standards be coordinated across local, state, and federal jurisdictions?

5. What coordination efforts among local, state, and federal governmental entities have been most effective in addressing electrification? How could those coordination efforts be improved?

Panelists:

- ***Norman C. Bay**, Partner, Willkie Farr & Gallagher LLP*
- ***Ann Rendahl**, Commissioner, Washington Utilities and Transportation Commission; Chair, NARUC Committee on Electricity*
- ***Bob Ethier**, Vice President of System Planning, ISO-New England Inc.*
- ***John Williams**, Vice President of Policy and Regulatory Affairs, New York State Energy Research and Development Authority (NYSERDA)*
- ***Emeka Anyanwu**, Officer, Energy Innovation & Resources Business Unit, Seattle City Light*
- ***Phil Jones**, Executive Director, Alliance for Transportation Electrification*
- ***Sara Baldwin**, Director of Electrification Policy, Energy Innovation*
- ***Abigail Anthony**, Commissioner, Rhode Island Public Utility Commission*

5:45 pm – 6:00 pm: Closing Remarks

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